

5 In the case of the broadband CDMA system chosen for the  
FDD mode (FDD frequency division duplex) for the UMTS  
mobile radio system, when transmitting from the base  
station to the subscriber station in the downlink  
direction, the problem arises that the number of  
orthogonal spread codes which are too useful at the  
same time is limited, which makes it more difficult to  
support variable data rates. Thus, with relatively high  
traffic densities in the system, it is not possible to  
10 allocate to all subscriber stations as many dedicated  
(i.e. used exclusively by the subscriber station)  
channels (DCH) as they need for transmission at their  
respective highest data rate.

15 For this reason, common channels, "shared channels"  
(DSCH downlink shared channel), are defined in the  
downlink direction, in this regard cf. ETSI, SMG2,  
UMTS-L1, Tdoc SMG2 UMTS-L1 559/98, dated November 9,  
1998. The common channels are formed within the  
20 broadband frequency band by spread codes which are  
temporarily allocated to various connections or  
subscriber stations for the duration of one or more  
frames in each case. In this context, however, the  
problem arises of how it is possible to signal to a  
25 subscriber station with minimum complexity whether  
information is being transmitted for the subscriber  
station, and if so in which of these common channels.

In addition, ETSI SMG2 UMTS-L1, Tdoc SMG2 UMTS-L1  
30 559/98, dated November 9, 1998, discloses that the data  
rates for the services transmitted using time-division  
multiplex are signaled using the TFCI parameter, which  
is transmitted during each frame as part of the control  
information, i.e. in-band. To ensure rapid allocation  
35 of common channels, explicit signaling is proposed  
which uses a particular number of these TFCI bits

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GR 98 P 5898 (Foreign version)

- 3a -

exclusively for the purpose of indicating a particular  
spread code (cf. penultimate page).

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This solution has the drawback that, as a result of this, for a given number of TFCI bits, the number of combination options for transport formats for the services is significantly limited, which has a  
5 considerable effect on flexibility when transmitting variable data rates.

The invention is based on the object of specifying a method and a radio communication system which, when  
10 using common channels for a plurality of connections, increase the flexibility of resource allocation when transmitting variable data rates. This object is achieved by the method based on the features of claim 1 and by the communication system based on the features  
15 of claim 10. Advantageous developments can be found in the subclaims.

The invention is based on the idea of implicitly signaling the used common channels using the data rate, and of permitting a plurality of combinations of  
20 channels (spread codes) as alternatives only for particular data rates for the individual services. This saves transmission capacity, because there is no need to reserve any individual bits within the TFCI parameter just for allocating the common channels to  
25 different connections. The data rate is signaled in-band, with this information relating to the data rate not needing to be contained in full in each frame. Information from the connection context or from  
30 preceding frames can likewise be used for determining the data rate.

In accordance with one advantageous development of the invention, mapping the same combination of transport  
35 formats for the services onto various channels using the TFCI allows a very high degree of flexibility can

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